

# DRAFT PERMIT

Permit No.: AK-003865-2

United States Environmental Protection Agency  
Region 10  
1200 Sixth Avenue  
Seattle, Washington 98101

## AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act, 33 U.S.C. §1251 et seq., as amended by the Water Quality Act of 1987, P.L. 100-4, the "Act",

TECK-COMINCO ALASKA, INC.  
Red Dog Mine

is authorized to discharge 1) treated wastewater through Outfall 001 at latitude of 68° 4' 17" North and longitude of 162° 52' 5" West to receiving water named Middle Fork Red Dog Creek, 2) treated construction camp site wastewater through Outfall 002 at latitude of 68° 1' 45" North and longitude of 162° 54' 56" West to the tundra, and 3) storm water in accordance with discharge point(s), effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective

This permit and the authorization to discharge shall expire at midnight,

Signed this      day of

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Michael F. Gearheard  
Director, Office of Water & Watersheds, Region 10  
U.S. Environmental Protection Agency

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Summary of Submittals

## I. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the effective period of this permit, the permittee is authorized to discharge pollutants from the outfalls specified herein to the Middle Fork Red Dog Creek and tundra wetlands, within the limits and subject to the conditions set forth herein. This permit authorizes the discharge of only those pollutants resulting from facility processes, waste streams, and operations that have been clearly identified in the permit application process.

## A. Effluent Limitations and Monitoring - Outfall 001

The permittee must limit and monitor discharges from outfall 001 to the Middle Fork Red Dog Creek as specified in Table 1, below. All figures represent maximum effluent limits unless otherwise indicated. The permittee must comply with the effluent limits in the tables at all times unless otherwise indicated, regardless of the frequency of monitoring or reporting required by other provisions of this permit.

There shall be no discharge from Outfall 001 until there is free flow of water in Main Stem Red Dog Creek. Prior to beginning discharge, the permittee shall consult with Alaska Department of Natural Resources, Office of Habitat Management and Permitting (OHMP) and Alaska Department of Environmental Conservation (ADEC). The permittee must supply written notice documenting the start of discharge to EPA within 24 hours.

## 1. Table 1:

TABLE 1 – Effluent Limitations and Monitoring Requirements for Outfall 001					
Parameter (in ug/L unless otherwise Noted)	Daily Maximum	Monthly Average	Weekly Average	Sample Frequency	Sample Type <sup>1</sup>
Cadmium <sup>2</sup>	0.94	0.44	---	1/week	24 hour composite
Cadmium <sup>2</sup> (proposed)	3.40	2.00	---	1/week	24 hour composite
Calcium, mg/L	---	---	---	1/week	24 hour composite
Copper <sup>2</sup>	34.40	17.15	---	1/week	24 hour composite
Chromium <sup>2</sup>	---	---	---	1/week	24 hour composite
Lead <sup>2</sup>	17.53	8.78	---	1/month	24 hour composite
Magnesium, mg/L	---	---	---	1/week	24 hour composite
Manganese <sup>2</sup>	---	---	---	1/week	24 hour composite
Mercury, total	0.02	0.01	---	1/month	24 hour composite
Selenium <sup>2</sup>	7.80	4.23	---	1/week	24 hour composite
Zinc <sup>2</sup>	386.32	237.11	---	1/week	24 hour composite
Total Suspended Solids (TSS), mg/L	30.0	20.0	---	1/week	24 hour composite
Total Dissolved Solids (TDS), mg/L	See Permit Part I.A.7.			1/week	24 hour composite
TDS Anions and Cations <sup>3</sup>	---	---	---	1/month	Grab

TABLE 1 – Effluent Limitations and Monitoring Requirements for Outfall 001

Parameter (in ug/L unless otherwise Noted)	Daily Maximum	Monthly Average	Weekly Average	Sample Frequency	Sample Type <sup>1</sup>
Cyanide, WAD	---	---	---	1/week	Grab
Fecal Coliform, #/100 ml	---	200	400	1/ 2 months	Grab
Aluminum <sup>2</sup>	159.35	55.20	---	1/month	24 hour composite
Iron <sup>2</sup> , µg/L	---	---	---	1/month	24 hour composite
Total Residual Chlorine, mg/L	---	---	---	1/month	Grab
Biochemical Oxygen Demand, mg/L	---	---	---	1/month	24 hour composite
Total Ammonia as N, mg/L	10.64	6.80	---	1/week	24 hour composite
Organic Priority Pollutant Scan <sup>4</sup> , µg/L	---	---	---	see note 3	24 hour composite
Turbidity, NTU	---	---	---	1/week	Grab
Temperature, °C	---	---	---	daily	Grab
Cumulative Volume, gallons	See Permit Part I.A.2.		---	---	Continuous Recording
Whole Effluent Toxicity, TUC	12.2	9.7	---	1/month	See Permit Part I.H.
pH, standard units	Within the range of 6.5 to 10.5			1/week	Grab
1. Effluent samples collected shall be representative of the effluent discharged without dilution from or contact with any outside sources. Results of analyses conducted under Permit Part I.A.1. shall be submitted monthly on the discharge monitoring report. 2. All metals shall be analyzed as total recoverable unless otherwise indicated. 3. This monitoring shall include a standard and complete suite of those cations and anions contributing to TDS including, but not limited to, carbonates, chlorides, sulfates, potassium, magnesium, calcium, and sodium. The carbonate analysis may be estimated based on direct measurement of alkalinity. 4. Volatile organics shall be monitored using EPA analytical method 624, semi-volatile organics shall be monitored using EPA analytical method 625. Testing shall be conducted once in May, July, and September.					

2. The maximum cumulative volume discharged from Outfall 001 shall not exceed 2.418 billion gallons from January 1 through December 31 every year.

The permittee shall report the cumulative volume discharged from Outfall 001 for that year to EPA, the Alaska Department of Environmental Conservation (ADEC), and the Alaska Department of Natural Resources/Office of Habitat Management and Permitting (OHMP) on the discharge monitoring report (DMR) each month. For example, if the permittee discharges 1 million gallons from Outfall 001 in May and 2 million gallons in June, the June DMR shall state a cumulative flow discharged from Outfall 001 of 3 million gallons (1 million + 2 million = 3 million). In addition, the permittee shall report the total volume discharged each month.

3. The permittee must not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce a sheen on the surface of the receiving water.

4. Hardness of the effluent shall be calculated monthly. The minimum, maximum, and average hardness shall be reported on the Discharge Monitoring Report (DMR).
5. Additional Monitoring and Reporting Requirements:
  - a. The permittee shall conduct analyses using analytical methods approved under 40 CFR §136. EPA has approved the use of Alternative Test Procedures (ATP) for cyanide (SM 4500CN-I), chloride (300.1), and metals (200.8) under 40 CFR 136.5 for use in this permit.
  - b. At a minimum, analytical methods should achieve the following method detection limits:

TABLE 2 – Method Detection Limit (MDL)		
Parameter <sup>1</sup>	MDL (current permit)	Requested MDL <sup>2</sup>
Aluminum	20 ug/L	20 ug/L
Cadmium	.1 ug/L	0.5 ug/L
Chromium	1 ug/L	2 ug/L
Copper	1 ug/L	5 ug/L
Iron	30 ug/L	40 ug/L
Cyanide, WAD	3 ug/L	3 ug/L
Lead	.08 ug/L	1 ug/L
Manganese	1 ug/L	2 ug/L
Mercury, total	.2 ug/L	0.005 ug/L
Selenium	2 ug/L	2 ug/L
Zinc	2 ug/L	5 ug/L
BOD <sub>5</sub>	8 mg/L	8 mg/L
Total residual chlorine	10 ug/L	100 ug/L
Total ammonia as N	10 ug/L	0.5 mg/L
1 All metals shall be measured in total recoverable unless otherwise noted.		
2 The permittee may request less restrictive method detection limits for ambient monitoring. The request shall be submitted to EPA in writing, and is subject to EPA approval.		

- c. As part of the development of the Quality Assurance Project Plan (see Part I.H.1.b) the permittee shall specify the analytical test method that will be used to achieve each method detection limit.
- d. For purposes of calculating monthly averages, zero may be assigned for values less than the MDL, the {numeric value of the MDL} may be assigned for values between the MDL and the ML. If the average value is

less than the MDL, the permittee must report “less than {numeric value of the MDL}” and if the average value is less than the ML, the permittee must report “less than {numeric value of the ML}.” If a value is equal to or greater than the ML, the permittee must report and use the actual value. The resulting average value must be compared to the effluent limitation to assess compliance.

- e. Valid test results from split samples shall be reported on the DMR. For reporting an average on the DMR, individual valid results for each test from a split sample are averaged first to determine a sample value. That value is averaged with other sample results obtained in the reporting period and the average of all sample results reported. For reporting the maximum on the DMR, individual valid results for each test from a split sample are averaged first to determine a sample value. That value is compared to other sample results obtained in the reporting period and the maximum of all sample results reported. For the purposes of reporting, split samples are reported as a single sample regardless of the number of times it is split. All laboratories used shall be identified on the DMR attachment.

6. Total Residual Chlorine Monitoring (TRC)

TRC shall be analyzed immediately after sample collection, using the DPD method approved by EPA (Standard Method 4500 Cl-G).

7. Total Dissolved Solids (TDS) Limitations and Monitoring Requirements

- a. Mixing Zone Locations: The Alaska Department of Environmental Conservation has authorized the following mixing zones:
  - (1) Main Stem Red Dog Creek mixing zone: begins at the confluence of North Fork Red Dog Creek and Middle Fork Red Dog Creek and continues downstream for 1,930 feet. Station 151 is the monitoring station at the edge of this mixing zone.
  - (2) Ikalukrok Creek mixing zone: begins at the confluence of Main Stem Red Dog Creek and Ikalukrok Creek and continues downstream 3,420 feet. Station 150 is the monitoring station at the edge of this mixing zone.
- b. After the commencement of discharge, the permittee shall limit the TDS load discharged from Outfall 001 so as to maintain in-stream TDS concentrations at or below 1500 mg/L at the edge of the mixing zone in Main Stem Red Dog Creek.

*[If the SSC for TDS is not approved, then the following language (in italics) would be included in the permit:]*

*This limitation is in effect until Arctic Grayling have begun spawning in Main Stem Red Dog Creek.*

*After the commencement of spawning, the permittee shall limit the TDS load discharged from Outfall 001 so as to maintain in-stream TDS concentrations at or below 500 mg/L (or 1000 mg/L, if approved) at the edge of the mixing zone in Main Stem Red Dog Creek measured at Station 151.*

- c. The permittee must consult with the EPA, ADEC, and OHMP regarding the end of Arctic Grayling spawning, and must receive written approval from EPA prior to increasing the TDS load discharged from Outfall 001 above the limit specified in I.A.7.c.*
- d. After Arctic grayling have finished spawning and the permittee has received written approval from EPA,*

The permittee shall limit the TDS load discharged from Outfall 001 so as to maintain in-stream TDS concentrations at or below all of the following:

- (1) At the edge of the mixing zone (Station 151) in Main Stem Red Dog Creek after Arctic Grayling spawning: 1500 mg/L
  - (2) At the edge of the mixing zone (Station 150) in Ikalukrok Creek: 1000 mg/L throughout the discharge season.
  - (3) Station 160: 500 mg/L from July 25<sup>th</sup> through the end of the discharge season.
- e. When discharging, monitoring by direct laboratory testing shall be conducted. All samples for TDS shall be grab samples, and the date and time of sample collection must be recorded. Sample collection shall be as follows:*
    - (1) TDS shall be monitored once per week at Station 151, Station 150, Station 160, and the effluent. The sample for Station 151 shall be taken as close in time as practicable to one of the sample events collected at the edge of the mixing zone in Mainstem Red Dog Creek; and the sample for Station 150 shall be taken as close in time as practicable to one of the sampling events at the edge of the mixing zone in Ikalukrok Creek.
    - (2) Conductivity and temperature shall be monitored concurrently with TDS sampling at Stations 151, 150, and 160.

The results of all monitoring and measurements must be submitted with the monthly discharge monitoring report (DMR).



- f. The permittee must update the TDS/Conductivity correlation curves annually with the direct laboratory testing data for Station 151 and Station 160. The correlation curves must be updated at the end of the discharge season. The permittee must submit written notification that the update has been completed with its last DMR for the discharge season.
- g. The permittee shall calculate and record the allowable flow volume from Outfall 001 at least twice each day using the formulas below and shall submit all of the data involved in those calculations (including the time the measurements were taken), and the calculation results, each month along with the discharge monitoring report (DMR). The permittee shall base each calculation on data collected within two hours of each shift change, and shall make each calculation within one hour of the collection of data. The calculations and data for Station 160 shall be made and recorded when the TDS limit for Station 160 is in effect. The allowable flow calculated from measurements taken at Station 151 and 160, and the outfall must reflect the stream conditions at each station and the outfall flow that are occurring at approximately the same time frame (i.e., the conductivity and flow measurements at Station 151, Station 160, and the flow from the outfall must be taken within 30 minutes of each other). The following shall be collected and calculated:

### **EFFLUENT**

- (1) Assume the effluent concentration ( $C_e$ ) is equal to 10% above the highest measured effluent value.
- (2) Measure the effluent flow ( $Q_e$ )

### **STATION 151**

- (1) Measure conductivity at Station 151
- (2) Calculate the total TDS concentration at Station 151 ( $C_{151(\text{total})}$ ) using the measured conductivity at Station 151
- (3) Measure the total flow at Station 151 ( $Q_{151(\text{total})}$ )
- (4) Calculate the flow at Station 151 ( $Q_{151}$ ) minus the effluent flow at Station 151 by using the equation:

$$Q_{151} = Q_{151(\text{total})} - Q_e$$

- (5) Calculate the TDS concentration at Station 151 ( $C_{151}$ ) minus the TDS contribution from the effluent using the following equation:

$$C_{151} = \frac{(C_{151(\text{total})} Q_{151(\text{total})}) - (C_e Q_e)}{(Q_{151(\text{total})} - Q_e)}$$

- (6) Calculate the allowable effluent flow ( $Q_{\text{allowable}}$ ) expected to result in 1500 mg/L (if the SSC during spawning is not approved in time for use in the final permit, 1500 would be replaced by 500 or 1000 depending on ADEC action on the TDS criterion) TDS at Station 151 using the following equation:

$$Q_{\text{allowable}} = \frac{Q_{151} (1500 - C_{151})}{(C_e - 1500)}$$

### **STATION 160**

- (1) Measure the conductivity at Station 160
- (2) Calculate the total TDS concentration at Station 160 ( $C_{160(\text{total})}$ ) using the measured conductivity of Station 160
- (3) Measure the total flow at Station 160 ( $Q_{160(\text{total})}$ )
- (4) Calculate the flow at Station 160 ( $Q_{160}$ ) minus the effluent flow at Station 160 by using the equation:

$$Q_{160} = Q_{160(\text{total})} - Q_e$$

- (5) Calculate the TDS concentration at Station 160 ( $C_{160}$ ) minus the TDS contribution from the effluent using the following equation:

$$C_{160} = \frac{(C_{160(\text{total})} Q_{160(\text{total})}) - (C_e Q_e)}{(Q_{160(\text{total})} - Q_e)}$$

- (6) Calculate the allowable effluent flow ( $Q_{\text{allowable}}$ ) expected to result in 500 mg/L TDS at Station 160 using the following equation:

$$Q_{\text{allowable}} = \frac{Q_{160} (500 - C_{160})}{(C_e - 500)}$$

- (7) The  $Q_{\text{allowable}}$  calculated above must be compared to the  $Q_{\text{allowable}}$  calculated for Station 151. The permittee must discharge at the more restrictive  $Q_{\text{allowable}}$ .

Calculations of TDS concentrations based on conductivity shall be made using correlation curves that are based on TDS and conductivity measurements made pursuant to this permit.

- h. After the end of each discharge season, the permittee shall submit a report, with the final DMR for the season, which compares the calculated TDS values in Main Stem Red Dog Creek and Ikalukrok Creek (based on the measured conductivity in the creeks) to the actual measured values. The report shall include the following information:

- (1) Measured TDS concentration at the edge of the edge of the mixing zone in Main Stem Red Dog Creek and at Station 151, and the date and time each sample was taken,
- (2) Measured conductivity at Station 151, and predicted TDS concentration at Station 151 at the date and approximate time the samples were taken in I.7.k.(1) (i.e., within one hour of sample collection),
- (3) Measured TDS concentration at Station 160, and the date and time each sample was taken,
- (4) Measured conductivity at Station 160, and predicted TDS concentration at Station 160 at the date and approximate time the samples were taken in I.7.k.(3) (i.e., within one hour of sample collection).

**B. Construction Camp Site Requirements.**

The permittee is authorized to discharge treated domestic wastewater from the Construction Camp through Outfall 002 into the tundra provided the following effluent limits and monitoring requirements are met:

1. Samples collected shall be representative of the effluent discharged without dilution from or contact with other sources. The permittee shall collect the samples after the last treatment unit prior to discharge.
2. The date of sampling shall be recorded. Results of the sample analyses shall be submitted monthly with the DMRs.
3. a. Table 3

TABLE 3						
Effluent Limitations and Monitoring Requirements for Outfall 002						
Parameter <sup>1</sup>	7-Day Average	30-Day Average	Daily Maximum	Units	Sampling Frequency	Sample Type <sup>2</sup>
Flow	---	---	---	gpm	Daily	Recording
Biochemical Oxygen Demand (BOD <sub>5</sub> ) Influent & effluent	45	30	60	mg/L	1/month	Composite
Biochemical Oxygen Demand (BOD <sub>5</sub> ) Influent & effluent	---	---	---	lb/day	1/month	Composite
Total Suspended Solids (TSS) Influent & effluent	45	30	60	mg/L	1/month	Composite

TABLE 3						
Effluent Limitations and Monitoring Requirements for Outfall 002						
Parameter <sup>1</sup>	7-Day Average	30-Day Average	Daily Maximum	Units	Sampling Frequency	Sample Type <sup>2</sup>
Total Suspended Solids (TSS) Influent & effluent	---	---	---	lb/day	1/month	Composite
Fecal coliform	---	20	40	#/100 ml	1/month	Grab
Total Residual Chlorine <sup>3</sup>	---	9.01	18.07	ug/L	1/month	Grab
Ammonia as N	---	---	---	mg/L	1/quarter	Grab
pH	See Permit Part I.B.3.c.			s.u.	1/month	Grab
Dissolved Oxygen	See Permit Part I.B.3.d.			mg/L	1/month	Grab
1 – For additional monitoring requirements see Permit Part I.B.3.b.						
2 – Composite samples of effluent shall be composed of a mixture of four discrete grab samples of effluent. The grab samples shall be collected and combined within a 24 hour period. Each grab sample shall be collected and stored in accordance with procedures prescribed in <u>Standard Methods</u> , 18 <sup>th</sup> , 19 <sup>th</sup> or 20 <sup>th</sup> Editions.						
3 – TRC shall be analyzed immediately after sample collection using the DPD method approved by EPA						

- b. The permittee must not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce a sheen on the surface of the receiving water.
- c. The pH must not be less than 6.5 standard units (s.u.) or greater than 8.5 standard units (s.u.).
- d. Dissolved Oxygen (DO) must be greater than 7 mg/L but less than 17 mg/L.
- e. Percent removal for BOD<sub>5</sub> and TSS must be reported monthly on the DMR. Percent removal requirements for BOD<sub>5</sub> and TSS are as follows: for any month, the monthly average effluent load shall not exceed 15 percent of the monthly average influent load. Loading shall be calculated using the following formula:

$$8.34 \times \text{pollutant concentration (mg/L)} \times \text{daily flow (mgd)}$$

- f. For purposes of calculating monthly averages, zero may be assigned for values less than the MDL, the {numeric value of the MDL} may be assigned for values between the MDL and the ML. If the average value is less than the MDL, the permittee must report “less than {numeric value of the MDL}” and if the average value is less than the ML, the permittee must report “less than {numeric value of the ML}.” If a value is equal to or greater than the ML, the permittee must report and use the actual value. The resulting average value must be compared to the effluent limitation to assess compliance.

- g. Valid test results from split samples shall be reported on the DMR. For reporting an average on the DMR, individual valid results for each test from a split sample are averaged first to determine a sample value. That value is averaged with other sample results obtained in the reporting period and the average of all sample results reported. For reporting the maximum on the DMR, individual valid results for each test from a split sample are averaged first to determine a sample value. That value is compared to other sample results obtained in the reporting period and the maximum of all sample results reported. For the purposes of reporting, split samples are reported as a single sample regardless of the number of times it is split. All laboratories used shall be identified on the DMR attachment.

C. Other Requirements.

1. Mine drainage shall be:
  - a. directed into the tailings impoundment; or
  - b. retained until it can be treated.
2. The permittee shall ensure that precipitation falling on the overburden stock pile shall be directed into the tailings impoundment.
3. Mine seepage from the ore site shall be collected by the Dirty Water Ditch. The water in the Dirty Water Sump shall be:
  - a. pumped into the tailings impoundment; or
  - b. retained until it can be treated.
4. When water in the Dirty Water Sump is pumped into the tailings impoundment, the pumped volume shall be recorded. The total volume pumped for each month shall be recorded and reported with the DMR for that month.
5. The permittee shall ensure that water in the Dirty Water Sump does not leak into Red Dog Creek.
6. Water in the Seepage Pond and related seepages, at the base of the tailings impoundment dam, shall be pumped back into the tailings impoundment, pumped to the high density solids treatment facility, or recycled through the mill.
7. The permittee shall ensure that water in the Seepage Pond does not leak into Red Dog Creek.
8. The permittee shall ensure that water in the tailings impoundment does not leak into Red Dog Creek. The permittee shall immediately pursue corrective actions if any water in the tailings impoundment leaks into Red Dog Creek.

9. The permittee may use treated wastewater as a dust suppressant on roads, pads and airport runways within the jurisdiction of this permit. Best management practices shall be used to insure that all waters sprayed do not drain into waters of the U.S. The permittee shall not use untreated wastewater as a dust suppressant.
10. The permittee shall not use treated wastewater as a dust suppressant on the haul road to the port.
11. The permittee shall ensure that operations at Red Dog Mine do not cause downstream water quality problems, such as the exclusion of fish or fish kills in Ikalukrok Creek or the exclusion of fish migrating up the North Fork of Red Dog Creek.

#### D. Ambient Monitoring Requirements

1. The permittee shall collect samples at the ambient monitoring stations listed below (see Permit Part VI. Ambient Monitoring Sampling Stations).  
*TCAK has proposed replacing Station 73 with Station 150 (although proposing to replace Station 73 ambient monitoring with Station 160 monitoring) and Station 10 with Station 151. A map is included in Permit Part VI.*

Station 2: Wulik River

Station 150: downstream edge of the mixing zone in Ikalukrok Creek downstream of confluence with Red Dog Creek.

Station 9: Ikalukrok Creek upstream of confluence with Red Dog Creek.

Station 151: downstream edge of the mixing zone in Red Dog Creek

Station 12: North Fork Red Dog Creek

Station 20: Middle Fork Red Dog Creek upstream of the confluence with North Fork Red Dog Creek

Station 140: Middle Fork Red Dog Creek upstream of the influence of outfall 001

~~Tributaries: Immediately upstream of where each tributary empties into the "clean" water ditch.~~

2. Ambient monitoring shall be conducted when there is flowing water (under ice or during open water conditions). For example, if there is flowing water at Station 151, but not at the other stations, the permittee shall sample at Station 151.
3. Ambient monitoring, outlined in this section, may be discontinued when the permittee has ceased discharging from Outfall 001 to Middle Fork Red Dog Creek for a period of 30 consecutive days. Ambient monitoring shall recommence when the permittee re-initiates a discharge from Outfall 001.
4. All ambient samples shall be grab samples.
5. The date of ambient sampling shall be recorded.

6. Ambient monitoring results for Stations 151 and 160 shall be submitted to EPA, ADEC, and OHMP with the monthly DMR. Other ambient monitoring results shall be submitted in the Annual Water Monitoring Summary Report required in Permit Part I.J

7. The following ambient monitoring shall be conducted:

*The changes highlighted in this Table compare what is proposed to what was in the current permit.*

TABLE 4 – Ambient Monitoring Requirements									
Parameter <sup>1</sup>	Station 2	Station 73 160 <sup>2</sup>	Station 9 <sup>2</sup>	Station 150	Station 151 <sup>2</sup>	Station 12 <sup>2</sup>	Station 20	Station 140 <sup>2</sup>	Tributary <sup>2</sup>
Aluminum	1/month	2/month	2/month	---	2/month	2/month	---	2/month	1/month
Cadmium	1/month	2/month	2/month	---	2/month	2/month	---	2/month	1/month
Chromium	1/month	2/month	2/month	---	2/month	2/month	---	2/month	1/month
Copper	1/month	2/month	2/month	---	2/month	2/month	---	2/month	1/month
Cyanide <sup>3</sup> , total, µg/L	1/month	2/month	---	---	2/month	---	---	---	---
Cyanide <sup>4</sup> , WAD, µg/L	---	---	---	---	2/month	---	2/month	---	---
Iron	1/month	2/month	2/month	---	2/month	2/month	---	2/month	1/month
Lead	1/month	2/month	2/month	---	2/month	2/month	---	2/month	---
Manganese	1/month	2/month	2/month	---	2/month	2/month	---	2/month	1/month
Nickel	1/month	2/month	2/month	---	2/month	2/month	---	2/month	1/month
Selenium	1/month	2/month	2/month	---	2/month	2/month	---	2/month	---
Silver	1/month	2/month	2/month	---	2/month	2/month	---	2/month	---
Zinc	1/month	2/month	2/month	---	2/month	2/month	---	2/month	1/month
Total ammonia as N, mg/L	1/month	2/month	2/month	---	2/month	2/month	---	2/month	---
Conductivity, µmhos/cm	1/month	2/month	2/month	---	2/month	2/month	---	2/month	---
Hardness, mg/L CaCO <sub>3</sub>	1/month	2/month	2/month	---	2/month	2/month	---	2/month	---
Temperature, °Celsius	1/month	2/month	2/month	---	2/month	2/month	---	2/month	---
Total Dissolved Solids (TDS), mg/L	1/month	1/week	2/month	1/week	1/week	2/month	---	2/month	---
TDS Anions and Cations <sup>5</sup>	---	1/month	---	1/month	1/month	---	---	---	---

TABLE 4 – Ambient Monitoring Requirements

Parameter <sup>1</sup>	Station 2	Station 73 160 <sup>2</sup>	Station 9 <sup>2</sup>	Station 150	Station 151 <sup>2</sup>	Station 12 <sup>2</sup>	Station 20	Station 140 <sup>2</sup>	Tributary <sup>2</sup>
pH, standard units	1/month	2/month	2/month	---	2/month	2/month	---	2/month	---
Dissolved Oxygen <sup>6</sup> , mg/L	3/month	3/month	---	---	3/month	---	---	---	---
Hydrogen Sulfide <sup>6</sup> , mg/L	3/month	3/month	---	---	3/month	---	---	---	---
Turbidity, NTU	---	---	---	---	---	3/month	---	3/month	---
Whole Effluent Toxicity <sup>6</sup> , TU <sub>c</sub>	---	---	1/month	---	---	1/month	---	---	---

- Monitoring for metals shall be in ug/L and total recoverable unless otherwise noted. For additional monitoring requirements for aluminum, cadmium, chromium, copper, cyanide, iron, lead, manganese, mercury, nickel, selenium, silver, and zinc see section I.A.5.b.
- The permittee shall spread out the sample collection dates so that the samples collected are representative of the calendar month. To the extent practicable, ambient monitoring shall coincide with effluent monitoring. If weather, safety, shipping, and other environmental constraints prevent the permittee from collecting representative samples, the permittee shall document the condition which prevented the representative samples from being collected on the discharge monitoring reports.
- For additional monitoring requirements for cyanide, see Permit Part I.A.6.
- The permittee shall notify the ADEC and the OHMP immediately by telephone when WAD cyanide concentrations exceed the detection limit of 3 ug/L.
- This monitoring shall include a standard and complete suite of those cations and anions contributing to TDS including, but not limited to, carbonates, chlorides, sulfates, potassium, magnesium, calcium, and sodium. The carbonate analysis may be estimated based on direct measurement of alkalinity.
- See Permit Part I.G. for additional testing requirements.

- Streamflow shall be determined daily at Stations 2, 8, 9, 151, 12, and 140. Streamflow shall be determined using standard methods recognized by the U.S. Geological Survey: gauging station data, discharge measurement, estimation using all available information. With the exception of the sites where streamflow estimates are made by adding or subtracting measured or gauged tributary flows, estimates must not be the sole means of determining flow at a site at all times; some discharge measurements shall be made for verification. The definition of "discharge measurement" is included in the definition section of this permit.

Streamflow data and the methods used to determine streamflow shall be submitted to EPA and ADEC monthly with the DMR.

#### E. Precipitation and Evaporation Monitoring Requirements.

- The permittee shall establish and maintain monitoring stations at the mine site to determine the net annual precipitation rate.



2. The precipitation and evaporation monitoring program shall begin on the effective date of this permit and end on the expiration date.
3. Precipitation (rain and snow) data shall be recorded daily. The permittee does not need to check the rain gauge on the days with no precipitation. However, the permittee shall record that the precipitation was zero on that day.
4. Evaporation data shall be recorded daily from June 1 to August 31 every year. Evaporation data shall be gathered earlier if the evaporation pan is not frozen. The permittee shall operate the evaporation pan properly to assure that the daily evaporation rate can be determined.
5. Spring snow pack readings shall be taken before spring melt each year. For snow pack readings, the measurement shall be reported with the Annual Report described in Permit Part I.J.
6. Records of precipitation and evaporation monitoring shall include:
  - a. The date and time of readings;
  - b. The name(s) of the individual(s) who performed the readings; and
  - c. Signature(s) of the individual(s) who performed the readings.
7. The precipitation and evaporation monitoring records shall be kept on site and made available to EPA and ADEC upon request.
8. The total precipitation and total evaporation rates shall be reported with the Annual Report described in Permit Part I.J.

F. Bioassessment Program Requirements.

*The following sections have been highlighted to show a comparison between what was in the current permit and what is proposed in the draft permit.*

- ~~4. During the period beginning on the effective date of the permit and lasting through the expiration date, the permittee shall perform the following bioassessment program every year to monitor and evaluate changes that may occur as a result of activities associated with the wastewater discharge from the mine. The permittee may elect to incorporate conditions of part I.F.1 into the plan prepared under part I.F.2 in order to avoid duplicative requirements.~~
  - ~~a. The permittee shall monitor and record the fisheries use (especially Dolly Varden and arctic grayling) of North Fork Red Dog Creek, Red Dog Creek, Anxiety Ridge, and Ikalukrok Creek during the ice-free season using appropriate sample techniques, e.g., minnow traps, visual surveys. Number of species, estimated age, size, type of species, any external abnormality, and fish condition shall be recorded.~~

- ~~b. The permittee shall analyze and record the concentrations of zinc, lead, copper, aluminum, cadmium, and selenium in muscle, gill, liver, and kidney from adult Dolly Varden in the Wulik River. The permittee shall collect this information twice per year, once during the fall prior to freeze-up (minimum sample size of six fish) and once in the spring after breakup (minimum sample size of six fish).~~
- ~~c. The permittee shall use aerial surveys to estimate the number of adult Dolly Varden overwintering in the Wulik River from mouth to a point approximately five miles upstream of the confluence of Ikalukrok Creek and Wulik River.~~

- ~~2.~~ 1. Bioassessment conditions required by the Alaska Department of Environmental Conservation Certificate of Reasonable Assurance: Within 60 days of the effective date of the permit, the permittee shall submit for review and approval to ADEC and OHMP, an updated version of the Biomonitoring Plan – ADF&G Methods for Aquatic Life Monitoring to Satisfy requirements under 1998 NPDES Permit – submitted by Cominco Alaska, Inc., 1998, which was designed to detect possible aquatic community changes related to the mine effluent as follows:

TABLE 6 – Bioassessment Sites	
Sample Site	Factors Measured
Middle Fork Red Dog Creek	Periphyton (as chlorophyll-a concentrations) Aquatic invertebrates: taxonomic richness and abundance
North Fork Red Dog Creek	Periphyton (as chlorophyll-a concentrations) Aquatic invertebrates: taxonomic richness and abundance Fish presence and use
Main Stem Red Dog Creek	Periphyton (as chlorophyll-a concentrations) Aquatic invertebrates: taxonomic richness and abundance Fish presence and use
Ikalukrok Creek Stations 9, 7, and upstream and downstream of Dudd Creek	Periphyton (as chlorophyll-a concentrations) Aquatic invertebrates: taxonomic richness and abundance Fish presence and use
Ikalukrok Creek	Fall aerial survey of returning chum salmon
Wulik River	Metals concentrations in Dolly Varden gill, liver, muscle, and kidney. Fall aerial survey of overwintering Dolly Varden
Anxiety Ridge	Fish presence and use
Evaingiknuk Creek	Fish presence and use
Buddy Creek	Fish presence and use
	Cells with this marking are proposed to be included in the State's Solid Waste Permit
	Cells with this marking are proposed for deletion.

Upon approval, the permittee shall implement the plan annually.

- 3.2. The permittee shall submit annual reports which summarize the results of the bioassessment program to EPA and ADEC by March 1st of the next year with the Annual Water Monitoring Summary Report, see Permit Part I.J.

G. Whole Effluent Toxicity Testing

Toxicity tests shall be performed once per month on samples from the effluent, and on ambient water from Stations 9 and 12.

1. Test Species and Methods:

- a. The permittee shall conduct short-term tests with the water flea, *Ceriodaphnia dubia* (survival and reproduction test), and the fathead minnow, *Pimephales promelas* (larval survival and growth test).
- b. The presence of chronic toxicity shall be estimated as specified in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, most recent edition, EPA/600-4-91-002.

2. Quality Assurance

- a. Toxicity tests shall include a control and at least 5 other dilutions that bracket the percent dilution offered by the mixing zone including 100% effluent.
- b. If organisms are not cultured in-house, concurrent testing with reference toxicants shall be conducted. Where organisms are cultured in-house, monthly reference toxicant testing is sufficient.
- c. If either the reference toxicant tests or the effluent tests do not meet all test acceptability criteria (TAC) as specified in the test methods manual, then the permittee must re-sample and re-test as soon as possible.
- d. Reference toxicant test shall be conducted using the same test conditions as the effluent toxicity test (i.e., same test duration, etc.).
- e. Control and dilution water shall be laboratory water. In no case shall water that has failed the TAC be used for dilution or control water.
- f. Effluent Chemical Testing: Chemical specific testing for the parameters listed in Permit Part I.A.1. shall be performed on a split sample collected for WET testing. If the timing of sample collection for WET coincides with the sample collection required in Permit Part I.A.1., then the chemical analysis of the split sample will fulfill the requirements of Permit Part 1.A.1.

Ambient Chemical Testing: Chemical specific testing for the parameters listed in Permit Part I.D.7 (for stations 9 and 12) shall be performed on a split sample collected for WET testing. If the timing of sample collection for WET coincides with the sample collection required in Permit Part I.D.7., then the chemical analysis of the split sample will fulfill the requirements of Permit Part 1.D.7.

### 3. Preparation of Generic Workplan

The permittee shall prepare and submit to EPA a copy of the permittee's toxicity reduction evaluation (TRE) workplan within 30 days of the effective date of this permit. This plan shall describe the steps the permittee intends to follow in the event that the effluent exceeds the chronic toxicity limits, and must include at a minimum:

- a. A description of the investigation and evaluation techniques that would be used to identify potential causes/sources of toxicity, effluent variability, treatment system efficiency;
- b. A description of the facility's method of maximizing in-house treatment efficiency, good housekeeping practices, and list of all chemicals used in operation of the facility;
- c. Identify who will conduct a toxicity identification evaluation (TIE) if one is necessary.

### 4. Reporting:

- a. Results of toxicity tests shall be reported on the Discharge Monitoring Report (DMR) for the month in which the tests are conducted. Results shall be reported in chronic toxic units ( $TU_c$ ), where  $TU_c = 100/IC_{25}$ .
- b. The full report shall be submitted by the end of the month in which the DMR is submitted.
- c. The full report shall consist of:
  - (1) the toxicity test results;
  - (2) the dates of sample collection and initiation of each toxicity test;
  - (3) the flow rate at the time of sample collection; and
  - (4) the results of the effluent analysis for chemical parameters required for the outfall as defined in Permit Part I.A.1.
- d. Test results for chronic tests shall be reported according to the chronic manual chapter on Report Preparation.

### 5. Chronic Toxicity Limits

- a. If chronic toxicity in the effluent exceeds:

Maximum Daily Limit = 12.2 TU<sub>c</sub>

Average Monthly Limit = 9.7 TU<sub>c</sub>

Then, in accordance with the permittee's TRE workplan and, at a minimum, EPA manual EPA/600/2-88/00, the permittee shall initiate a TRE within fifteen (15) days of receipt of sample results of the exceedance.

- b. The permittee shall notify EPA and ADEC in writing within fifteen (15) days of receipt of the effluent WET results that exceed the chronic toxicity limits. Notification shall include the following:
- (1) The finding of the TRE or other investigation to identify the cause(s) of toxicity;
  - (2) Actions taken or that will be taken to mitigate the impact of the discharge, to correct the noncompliance and to prevent the recurrence of toxicity;
  - (3) Where corrective actions including a TRE have not been completed, an expeditious schedule under which corrective actions will be implemented.

6. Toxicity Identification Evaluation (TIE)

If chronic toxicity is detected in the effluent in any two of the toxicity tests conducted during the discharge season, then the permittee shall, in accordance with EPA acute and chronic manuals EPA/600/6-91/005F (Phase I), EPA/600/R-92/080 (Phase II), and EPA 600/R-92/081 (Phase III), initiate a TIE within fifteen (15) days.

H. Quality Assurance Requirements.

The permittee must develop a quality assurance plan (QAP) for all monitoring required by this permit. The plan must be submitted to EPA and insert state agency for review within 60 days of the effective date of this permit and implemented within 120 days of the effective date of this permit. Any existing QAPs may be modified for submittal under this section.

1. The QAP must be designed to assist in planning for the collection and analysis of effluent and receiving water samples in support of the permit and in explaining data anomalies when they occur.
2. Throughout all sample collection and analysis activities, the permittee must use the EPA-approved QA/QC and chain-of-custody procedures described in Requirements for Quality Assurance Project Plans (EPA/QA/R-5) and Guidance for Quality Assurance Project Plans (EPA/QA/G-5). The QAP must be prepared in the format that is specified in these documents.

3. At a minimum, the QAP must include the following:
    - a) Details on the number of samples, type of sample containers, preservation of samples, holding times, analytical methods, analytical detection and quantitation limits for each target compound, type and number of quality assurance field samples, precision and accuracy requirements, sample preparation requirements, sample shipping methods, and laboratory data delivery requirements.
    - b) Map(s) indicating the location of each sampling point.
    - c) Qualification and training of personnel.
    - d) Name(s), address(es) and telephone number(s) of the laboratories, used by or proposed to be used by the permittee.
  4. The permittee must amend the QAP whenever there is a modification in sample collection, sample analysis, or other procedure addressed by the QAP.
  5. Copies of the QAP must be kept on site and made available to EPA and/or insert state agency upon request.
- I. Site Management Pollution Prevention Plan Requirements
1. The permittee shall develop a site management pollution prevention plan (the Plan) to prevent and minimize the potential for the release of pollutants from their property to waters of the United States within 90 days of the effective date of this permit. The Plan shall be signed in accordance with Permit Part IV.E. A notice of the Plan's completion and implementation shall be sent to EPA and ADEC. The Plan shall be retained on-site and be made available to EPA and ADEC upon request.
  2. The Plan shall be consistent with the above objectives and the general guidance contained in the following publications:

Best Management Practices Guidance Document, EPA, 1993.

Storm Water Management Plans for Industrial Activities, EPA, 1992.

Storm Water Management Plans for Construction Activities, EPA, 1992.

The permittee shall establish specific best management practices to meet the objectives and shall address each component or system capable of generating or causing a release of pollutants. Moreover, the Plan shall include, at a minimum, the following items:

    - a. Pollution Prevention Team. The Plan shall identify a specific individual or individuals within the facility organization as members of the Pollution Prevention Team. The pollution prevention team shall be responsible for developing the Plan and assisting the facility or plant manager in its implementation, maintenance, and revision. The Plan shall clearly identify

who is responsible for the implementation of each condition of the Plan. The activities and responsibilities of the team shall address all aspects of the facility's discharges. In lieu of naming specific individuals as members of the pollution prevention team, the permittee may name the corporate position(s) responsible for developing and implementing the Plan.

b. Description of Sources.

- (i) A site map indicating an outline of the portions of the drainage area of each point source that are within the facility boundaries, each existing structural control measure to reduce pollutants in storm water runoff, surface water bodies, locations where significant materials are exposed to precipitation, and the locations (if applicable) of the following activities and sites where such activities or sites are exposed to precipitation:

buildings	any disturbed area
camps	construction areas
airport	

- (ii) A site map indicating the flow direction of drainage.
- (iii) For each area that generates storm water discharges associated with industrial activity with a reasonable potential for containing amounts of pollutants, a prediction of the direction of flow, and an identification of the types of pollutants which are likely to be present in storm water discharges associated with industrial activity. Factors to consider include the toxicity of chemical; quantity of chemicals used, produced or discharged; the likelihood of contact with storm water; and history of significant leaks or spills of toxic or hazardous pollutants. Flows with a potential for causing erosion shall be identified.
- (iv) For each area that generates storm water discharges associated with construction or exploration activities, descriptions of the following components shall be included in the Plan:
- the nature of the activity;
  - estimates of the total area of the site and the area of the site that is expected to be disturbed by mining activities or related land-disturbing activities;
  - existing data describing the soil or the existing data describing the quality of any discharge from the site;
  - a site map indicating drainage patterns and approximate slopes anticipated after land-disturbing activities, areas of soil disturbance, the location of major control structures identified in the Plan, areas where stabilization practices are expected to occur; and

- the name of the receiving water(s) and the ultimate receiving water(s).

- c. **Inventory of Exposed Materials.** An inventory of the types of materials handled at the site that potentially may be exposed to precipitation and the materials that have the potential for failure (tank overflow or leakage). The inventory shall include a narrative description of significant materials that have been handled, treated, stored or disposed in a manner to allow exposure to storm water; method, location, and size of on-site storage or disposal; materials management practices employed to minimize contact of materials with storm water runoff; the location and a description of existing structural and non-structural control measures to reduce pollutants in storm water runoff; and a description of any treatment the storm water receives.
- d. **Spills and Leaks.** A list of significant spills that may occur at the site and at areas that are exposed to precipitation or that otherwise drain to a storm water conveyance at the facility. Such list shall be updated as appropriate during the term of the permit.
- e. **Risk Identification and Summary of Potential Pollutant Sources.** The Plan shall identify all activities, sites, and significant materials which may potentially be pollutant sources. The Plan shall also include a narrative description of the potential pollutant sources from the following activities: loading and unloading operations; outdoor storage activities; outdoor manufacturing or processing activities; dust or particulate generating processes; and on-site waste disposal practices. The description shall specifically list any potential source of pollutants at the site, and for each potential source, any pollutant or pollutant parameter (e.g. biochemical oxygen demand, etc.) of concern shall be identified. The Plan shall provide a description of potential sources which may reasonably be expected to add amounts of pollutants to storm water discharges.
- f. **Measures and Controls.** The facility shall develop a description of pollution prevention controls appropriate for the facility and implement such controls. The appropriateness and priorities of controls in the Plan shall reflect identified potential sources of pollutants at the facility. The description of management controls shall address the following minimum components, including a schedule for implementing such controls:
  - (i) **Good Housekeeping** - Good housekeeping requires the maintenance of areas which may contribute pollutants.
  - (ii) **Preventive Maintenance** - A preventive maintenance program shall involve timely inspection and maintenance of storm water management devices (e.g., cleaning oil/water separators, catch basins, pumps, channels, ditch) as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface



waters, and ensuring appropriate maintenance of such equipment and systems.

- (iii) Spill Prevention and Response Procedures - Areas where spills could result in the discharge of pollutants shall be identified clearly in the Plan. Where appropriate, specifying material handling procedures, storage requirements, and use of equipment such as diversion valves in the Plan should be considered. Procedures for cleaning up spills shall be identified in the Plan and made available to the appropriate personnel. The necessary equipment to implement a clean up must be available to personnel.
- (iv) Measures and Controls for storm water associated with construction or exploration activities outside of the area which drains into the tailings impoundment - The Plan shall describe the relationship between the implementation and maintenance of controls and measures and the various stages or phases of earth disturbance (for example, clearing and grubbing necessary for perimeter controls, initiation of perimeter controls, remaining clearing and grubbing, road grading, remaining site grading, storm drain installation, final grading, stabilization, removal of control measures). The description of controls shall address the following minimum components:
  - erosion and sediment controls;
  - stabilization practices;
  - structural practices;
  - storm water management (description of measure to control pollutants in storm water discharges);
  - other controls to eliminate contact of storm water with materials on site; and
  - measures to reduce pollutant loadings.
- g. Employee Training. The Plan shall identify dates for annual employee training programs. The training programs shall inform personnel responsible for implementing activities identified in the Plan or otherwise responsible for all levels of responsibility of the components and goals of the Plan. Training shall address topics such as spill response, good housekeeping and material management practices.
- h. Sediment and Erosion Control. The Plan shall identify areas which, due to topography, activities, or other factors, have a high potential for soil erosion, and identify structural, vegetative, and/or stabilization measures to be used to limit erosion.
- i. Specific Best Management Practices. The Plan shall establish specific best management practices or other measures which ensure that the following specific requirements are met:

- (i) Ensure that berms, including any pond walls, ditches, dikes, dams and similar water retention structures shall be constructed in a manner that they reject the passage of unwanted water.
  - (ii) Ensure that measures are taken to assume that pollutant materials removed from the process water and wastewater streams will be retained and not discharged to waters of the United States.
  - (iii) Ensure that all water control devices, including but not limited to structures and berms, and all solids retention structures such as berms, dikes, and pond structures and dams, shall be maintained to continue their effectiveness and to protect from failure.
  - (iv) Ensure proper management of solid and hazardous waste in accordance with regulations promulgated under the Resource Conservation and Recovery Act (RCRA) and the Alaska Solid Waste Management Regulations (18 AAC 60). Management practices required under RCRA regulations shall be referenced in the Plan.
  - (v) Reflect requirements for Spill Prevention, Control, and Countermeasure (SPCC) plans under Section 311 of the Clean Water Act and 40 CFR Part 112. The Plan may incorporate any part of such plans by reference.
3. a. Qualified facility personnel shall conduct routine inspections on a monthly basis on areas susceptible to leaks (including leaks from the tailings impoundment), spills and other identified problem areas.
- b. For an inspection, the following conditions shall be met:
- (i) A visual inspection of equipment needed to implement the Plan, such as spill response equipment, shall be made.
  - (ii) Areas impacted by storm water discharge shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the permit or whether additional control measures are needed. Structural storm water management measures, sediment and erosion control measures, and other structural pollution prevention measures identified in the Plan shall be observed to ensure that they are operating correctly.
- c. The permittee shall inspect disturbed areas of the construction or exploration site exposed to precipitation outside of the area which drains into the tailings impoundment as follows:
- (i) weekly during the months of May, June, September and October; and

- (ii) within 24 hours of the end of a 24-hour rain event that is 0.5 inches or greater.
- 4. Twice per year, the permittee shall 1) identify areas impacted by storm water discharges associated with construction or exploration activities, and 2) evaluate whether measures identified in the Plan to reduce pollutant loadings generated by storm water discharges associated with construction or exploration activities are adequate and properly implemented.
- 5. Based on the results of the inspections, the permittee shall initiate corrective measures within 30 days of such inspection or as soon as practicable under extenuating circumstances. The permittee shall notify EPA and ADEC of the extenuating circumstances within 15 days of the inspection. Any corrective measures shall be documented and be included in the Plan.
- 6. The permittee shall prepare an annual report summarizing 1) the scope of the inspections, 2) personnel making the inspections, 3) the dates of the inspections, 4) corrective actions taken as a result of the inspection, 5) description of the quality and quantity of storm water discharged, 6) construction activities during the year, 7) employee training conducted during the year, and 8) Plan modifications made during the year.

In addition, the report shall identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report shall contain a certification that the facility is in compliance with the Plan and this permit.

This report shall be signed in accordance with Permit Part IV.E. and shall be submitted to EPA and ADEC by February 10 of the next year.

- 7. The permittee shall amend the Plan whenever there is a change in design, construction, operation, or maintenance, which has an effect on the potential for the discharge of pollutants to the waters of the United States or if the Plan proves to be ineffective in eliminating or minimizing pollutants from sources impacting water quality, or in otherwise achieving the general objectives of controlling pollutants. Amendments to the Plan are subject to review by EPA and ADEC, and they shall be kept on site and made available to EPA and ADEC upon request.

The Plan shall be updated to include new construction or exploration activities. The update must be completed seven (7) days prior to commencement date of new construction or exploration activities.

#### J. Annual Water Monitoring Summary Report

All monitoring results for a year must be included in an Annual Water Monitoring Summary Report and submitted by March 1 of the following year. The report must include a presentation of the analytical results and an evaluation of the results of monitoring required in Permit Parts I.A through I.G. The evaluation must include an

electronic spreadsheet containing monitoring data from the previous five years, a graphical presentation of the data at each monitoring station, a comparison of upstream and downstream monitoring results (to show any differences) and a comparison of monitoring results for each station over time (to show any trends). The Annual Water Monitoring Summary Report may reference the monthly reports for Quality Assurance/Quality Control (QA/QC) information.

All monitoring results for a calendar year shall be reported in the Report. At a minimum, the report must include the following:

1. Dates of sample collection and analyses
2. Results of sample analysis
3. Relevant QA/QC information.

## II. MONITORING, RECORDING AND REPORTING REQUIREMENTS

### A. Representative Sampling (Routine and Non-Routine Discharges)

Samples and measurements must be representative of the volume and nature of the monitored discharge.

In order to ensure that the effluent limits set forth in this permit are not violated at times other than when routine samples are taken, the permittee must collect additional samples at the appropriate outfall whenever any discharge occurs that may reasonably be expected to cause or contribute to a violation that is unlikely to be detected by a routine sample. The permittee must analyze the additional samples for those parameters limited in Permit Part I.A. that are likely to be affected by the discharge.

The permittee must collect such additional samples as soon as the spill, discharge, or bypassed effluent reaches the outfall. The samples must be analyzed in accordance with paragraph III.C ("Monitoring Procedures"). The permittee must report all additional monitoring in accordance with paragraph III.D ("Additional Monitoring by Permittee").

### B. Reporting of Monitoring Results

The permittee must summarize monitoring results each month on the Discharge Monitoring Report (DMR) form (EPA No. 3320-1) or equivalent. The permittee must submit reports monthly, postmarked by the 10th day of the following month. The permittee must sign and certify all DMRs, and all other reports, in accordance with the requirements of Permit Part IV.E. ("Signatory Requirements"). The permittee must submit the legible originals of these documents to the Director, Office of Compliance and Enforcement, with copies to **the State Agencies** at the following addresses:

US EPA Region 10  
Attn: PCS Data Entry Team

1200 Sixth Avenue, OCE-133  
Seattle, Washington 98101

copy to: Alaska Department of Environmental Conservation  
Division of Water  
610 University Avenue  
Fairbanks, Alaska 99709-3643

Alaska Department of Natural Resource  
Office of Habitat Management and Permitting  
1300 College Road  
Fairbanks, Alaska 99701-1599

**C. Monitoring Procedures**

Monitoring must be conducted according to test procedures approved under 40 CFR 136, unless other test procedures have been specified in this permit or approved by EPA as an alternate test procedure under 40 CFR 136.5.

**D. Additional Monitoring by Permittee**

If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR 136 or as specified in this permit, the permittee must include the results of this monitoring in the calculation and reporting of the data submitted in the DMR.

Upon request by EPA, the permittee must submit results of any other sampling, regardless of the test method used.

**E. Records Contents**

Records of monitoring information must include:

1. the date, exact place, and time of sampling or measurements;
2. the name(s) of the individual(s) who performed the sampling or measurements;
3. the date(s) analyses were performed;
4. the names of the individual(s) who performed the analyses;
5. the analytical techniques or methods used; and
6. the results of such analyses.

**F. Retention of Records**

The permittee must retain records of all monitoring information, including, all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, copies of DMRs, a copy of the NPDES permit, and records of all data used to complete the application for this permit, for a period of at least five years from the

date of the sample, measurement, report or application. This period may be extended by request of EPA or ADEC at any time.

G. Twenty-four Hour Notice of Noncompliance Reporting

1. The permittee must report the following occurrences of noncompliance by telephone within 24 hours from the time the permittee becomes aware of the circumstances:
  - a) any noncompliance that may endanger health or the environment;
  - b) any unanticipated bypass that exceeds any effluent limitation in the permit (See Permit Part III.F., "Bypass of Treatment Facilities");
  - c) any upset that exceeds any effluent limitation in the permit (See Permit Part III.G., "Upset Conditions"); or
  - d) any violation of a maximum daily discharge limitation for any of the pollutants in Table 1 of Permit Part I.A.
2. The permittee must also provide a written submission within five days of the time that the permittee becomes aware of any event required to be reported under subpart 1 above. The written submission must contain:
  - a) a description of the noncompliance and its cause;
  - b) the period of noncompliance, including exact dates and times;
  - c) the estimated time noncompliance is expected to continue if it has not been corrected; and
  - d) steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
3. The Director of the Office of Compliance and Enforcement may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the NPDES Compliance Hotline in Seattle, Washington, by telephone, (206) 553-1846.
4. Reports must be submitted to the addresses in Permit Part II.B ("Reporting of Monitoring Results").

H. Other Noncompliance Reporting

The permittee must report all instances of noncompliance, not required to be reported within 24 hours, at the time that monitoring reports for Part III.B ("Reporting of Monitoring Results") are submitted. The reports must contain the information listed in Permit Part II.G.2 ("Twenty-four Hour Notice of Noncompliance Reporting").

I. Changes in Discharge of Toxic Pollutants

The permittee must notify the Director of the Office of Water and Watersheds and ADEC as soon as it knows, or has reason to believe:

1. That any activity has occurred or will occur that would result in the discharge, on a **routine or frequent** basis, of any toxic pollutant that is not limited in the permit, if that discharge may reasonably be expected to exceed the highest of the following “notification levels”:
  - a) One hundred micrograms per liter (100 ug/l);
  - b) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
  - c) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or
  - d) The level established by EPA in accordance with 40 CFR 122.44(f).
2. That any activity has occurred or will occur that would result in any discharge, on a **non-routine or infrequent** basis, of any toxic pollutant that is not limited in the permit, if that discharge may reasonably be expected to exceed the highest of the following “notification levels”:
  - a) Five hundred micrograms per liter (500 ug/l);
  - b) One milligram per liter (1 mg/l) for antimony;
  - c) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or
  - d) The level established by EPA in accordance with 40 CFR 122.44(f).
3. The permittee must submit the notification to Office of Water and Watersheds at the following address:

US EPA Region 10  
Attn: NPDES Permits Unit Manager  
1200 Sixth Avenue, OWW-130  
Seattle, Washington 98101

#### J. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date.

### III. COMPLIANCE RESPONSIBILITIES

#### A. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification, or for denial of a permit renewal application.

B. Penalties for Violations of Permit Conditions

1. Civil and Administrative Penalties. Pursuant to 40 CFR Part 19 and the Act, any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. § 2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. § 3701 note) (currently \$32,500 per day for each violation).
2. Administrative Penalties. Any person may be assessed an administrative penalty by the Administrator for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Pursuant to 40 CFR 19 and the Act, administrative penalties for Class I violations are not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. § 2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. § 3701 note) (currently \$11,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$32,500). Pursuant to 40 CFR 19 and the Act, penalties for Class II violations are not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. § 2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. § 3701 note) (currently \$11,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$157,500).
3. Criminal Penalties:
  - a) Negligent Violations. The Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than 2 years, or both.
  - b) Knowing Violations. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to



\$50,000 per day of violation, or imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than 6 years, or both.

- c) **Knowing Endangerment.** Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.
- d) **False Statements.** The Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both. The Act further provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

C. Need To Halt or Reduce Activity not a Defense

It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this permit.

D. Duty to Mitigate

The permittee must take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

E. Proper Operation and Maintenance

The permittee must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by the permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

F. Bypass of Treatment Facilities

1. Bypass not exceeding limitations. The permittee may allow any bypass to occur that does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 2 and 3 of this Part.
2. Notice.
  - a) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it must submit prior notice, if possible at least 10 days before the date of the bypass.
  - b) Unanticipated bypass. The permittee must submit notice of an unanticipated bypass as required under Permit Part II.G ("Twenty-four Hour Notice of Noncompliance Reporting").
3. Prohibition of bypass.
  - a) Bypass is prohibited, and the Director of the Office of Compliance and Enforcement may take enforcement action against the permittee for a bypass, unless:
    - (i) The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
    - (ii) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment must have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance; and
    - (iii) The permittee submitted notices as required under paragraph 2 of this Part.
  - b) The Director of the Office of Compliance and Enforcement may approve an anticipated bypass, after considering its adverse effects, if the Director

determines that it will meet the three conditions listed above in paragraph 3.a. of this Part.

#### G. Upset Conditions

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the permittee meets the requirements of paragraph 2 of this Part. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
2. Conditions necessary for a demonstration of upset. To establish the affirmative defense of upset, the permittee must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
  - a) An upset occurred and that the permittee can identify the cause(s) of the upset;
  - b) The permitted facility was at the time being properly operated;
  - c) The permittee submitted notice of the upset as required under Permit Part II.G, "Twenty-four Hour Notice of Noncompliance Reporting;" and
  - d) The permittee complied with any remedial measures required under Permit Part III.D, "Duty to Mitigate."
3. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

#### H. Toxic Pollutants

The permittee must comply with effluent standards or prohibitions established under Section 307(a) of the Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

#### I. Planned Changes

The permittee must give notice to the Director of the Office of Water and Watersheds as specified in Permit Part II.I.3. ("Changes in Discharge of Toxic Pollutants") and ADEC as soon as possible of any planned physical alterations or additions to the permitted facility whenever:

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source as determined in 40 CFR 122.29(b); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are

subject neither to effluent limitations in the permit, nor to notification requirements under Permit Part II.I. ("Changes in Discharge of Toxic Substances").

J. Anticipated Noncompliance

The permittee must give advance notice to the Director of the Office of Compliance and Enforcement and ADEC of any planned changes in the permitted facility or activity that may result in noncompliance with this permit.

IV. GENERAL PROVISIONS

A. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause as specified in 40 CFR 122.62, 122.64, or 124.5. The filing of a request by the permittee for a permit modification, revocation and reissuance, termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

B. Duty to Reapply

If the permittee intends to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. In accordance with 40 CFR 122.21(d), and unless permission for the application to be submitted at a later date has been granted by the Regional Administrator, the permittee must submit a new application at least 180 days before the expiration date of this permit.

C. Duty to Provide Information

The permittee must furnish to EPA and ADEC, within the time specified in the request, any information that EPA or ADEC may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee must also furnish to EPA or ADEC, upon request, copies of records required to be kept by this permit.

D. Other Information

When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or that it submitted incorrect information in a permit application or any report to EPA or ADEC, it must promptly submit the omitted facts or corrected information.

E. Signatory Requirements

All applications, reports or information submitted to EPA and ADEC must be signed and certified as follows.

1. All permit applications must be signed as follows:
  - a) For a corporation: by a responsible corporate officer.
  - b) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively.
  - c) For a municipality, state, federal, Indian tribe, or other public agency: by either a principal executive officer or ranking elected official.
2. All reports required by the permit and other information requested by EPA or ADEC must be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
  - a) The authorization is made in writing by a person described above;
  - b) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company; and
  - c) The written authorization is submitted to the Director of the Office of Compliance and Enforcement and ADEC.
3. Changes to authorization. If an authorization under Permit Part IV.E.2. ("Signatory Requirements") is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Permit Part IV.E.2. must be submitted to the Director of the Office of Compliance and Enforcement and ADEC prior to or together with any reports, information, or applications to be signed by an authorized representative.
4. Certification. Any person signing a document under this Part must make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

**F. Availability of Reports**

In accordance with 40 CFR 2, information submitted to EPA pursuant to this permit may be claimed as confidential by the permittee. In accordance with the Act, permit applications, permits and effluent data are not considered confidential. Any confidentiality claim must be asserted at the time of submission by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice to the permittee. If a claim is asserted, the information will be treated in accordance with the procedures in 40 CFR 2, Subpart B (Public Information) and 41 Fed. Reg. 36902 through 36924 (September 1, 1976), as amended.

#### G. Inspection and Entry

The permittee must allow the Director of the Office of Compliance and Enforcement, EPA Region 10; ADEC; or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the Act, any substances or parameters at any location.

#### H. Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to persons or property or invasion of other private rights, nor any infringement of federal, tribal, state or local laws or regulations.

#### I. Transfers

This permit is not transferable to any person except after notice to the Director of the Office of Water and Watersheds as specified in Permit Part IV.E.3. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Act. (See 40 CFR 122.61; in some cases, modification or revocation and reissuance is mandatory).

#### J. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Act.

## V. DEFINITIONS.

- A. "Average monthly discharge limitation" means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month.
- B. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
- C. A "24 hour composite" sample shall mean a flow-proportioned mixture of not less than 8 discrete aliquots in 24 hours. Each aliquot shall be a grab sample of not less than 100 ml and shall be collected and stored in accordance with procedures prescribed in the most recent edition of *Standard Methods for the Examination of Water and Wastewater*.
- D. "Chronic toxicity" measures a sublethal effect (e.g., reduced growth, reduced reproduction) to experimental test organisms exposed to an effluent or ambient water compared to that of the control organisms.
- E. "Daily discharge" means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day.
- F. "Discharge measurement" means measuring width, depths, and velocities using a tape or tagline, sounding equipment, and a current meter.
- G. "Director" means the Regional Administrator, or an authorized representative, of EPA, Region 10.
- H. "Dirty Water Ditch" is the collection channel for the ore body seeps.
- I. "Dirty Water Sump" is the pit into which the Dirty Water Ditch flows.
- J. "Estimating" streamflow means 1) using gauging station data or discharge measurements upstream or downstream of the sampling site, 2) interpolating between discharge measurements made at the sampling site before and after the sampling date, 3) estimating the width, the depth, and roughly measuring the velocity by timing a float, or 4) correlating flows at gauged or measured sites by hydrographic or measurement comparisons.

- K. "Fecal coliform" means those bacteria that can ferment lactose at  $44.5^{\circ} \pm 0.2^{\circ}\text{C}$  to produce gas in a multiple tube procedure. It also means all bacteria that produce blue colonies within 24 hours of incubation at  $44.5^{\circ} \pm 0.2^{\circ}\text{C}$  in an M-FC broth medium. For fecal coliform analysis, the average shall be computed as the logarithmic mean.
- L. "Gauging station data" means stage record or gage-height readings and a stage discharge relation or rating from which discharge can be computed.
- M. A "Grab" sample is a single sample or measurement taken at a specific time or over as short period of time as is feasible.
- N. "Inhibition concentration", IC, is a point estimate of the toxicant concentration that causes a given percent reduction (p) in a non-quantal biological measurement (e.g., Interpolation Method).
- O. "Laboratories" mean all laboratories used by the permittee to analyze samples for this permit. Laboratories include the permittee's consultants (if applicable), the permittee's in-house laboratories and other laboratories, and the permittee's contracted laboratories.
- P. "Maximum daily discharge limitation" means the highest allowable "daily discharge."
- Q. "Mine" means an active mining area, including all land and property placed under, or above the surface of such land, used or resulting from the work of extracting metal ore or minerals from their natural deposits by any means or methods, including secondary recovery of metal ore from refuse or other storage piles, wastes, or rock dumps and mill tailings derived from the mining, cleaning, or concentration of metal ores.
- R. "Mine drainage" means any water drained, pumped or siphoned from a "mine", including seeps from the ore.
- S. "Precipitation" means rainfall or snowmelt.
- T. "Reroute" of Red Dog Creek means to divert, channel, or direct Red Dog Creek to flow differently from its natural course or from its course in 1993. Rerouting of Red Dog Creek will allow the permittee to mine at locations that are currently unreachable because of the interference of water.
- U. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
- V. "Storm water" means storm water runoff, snow melt runoff, and surface runoff and drainage. Runoff from waste rock piles, ore and sub-ore piles, spent ore piles,



overburden, unreclaimed disturbed areas and other active mining areas constitutes "mine drainage", not storm water.

- W. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

VI. AMBIENT MONITORING SAMPLING LOCATIONS